

# THE WAY of a SEAGULL

A PROPER study of the flight of birds is long overdue, if for no other reason than that the flow of air over a bird's wing at large angles of incidence opens up possibilities which may well be worth while as offering a solution or partial solution of the landing problem of aircraft—the most serious and neglected problem in the whole field of aeronautics.

To take a dead bird and to mount it in the wind tunnel and expect to obtain results of any value is a waste of time. By the use of the cinematograph camera sufficient data should be obtainable to throw a new light on airflow over surfaces which do not apparently conform to the theoretically laid-down laws of streamline motion.

It is not possible to dogmatise on bird flight, though there is no difficulty in finding dogmas among those in aviation who are solely concerned with designing and constructing fixed-wing aircraft for a variable profit. A wave of the hand, a shake of the head, a murmur about low Reynold's numbers and the uselessness of ornithopters, and the subject is dismissed. But the bird has two advantages over the aeroplane, whatever else may be said against it. One is that the pilot's view is superb, and the other is that it can land without any forward run or fear of smashing its undercarriage.

## The Pictures

I don't propose to write an article on bird flight. This is merely a note I have been asked to write round the photographs of seagulls reproduced on the opposite page—photographs, unfortunately, from abroad and taken in circumstances of which I have no full knowledge. The kind of fact which would be useful would be the direction of the bird's flight relative to the wind and to the camera at the time the photograph was taken, and the speed of the wind.

Fig. 1 shows a gull in a nearly stalled attitude with, I believe, very little forward speed. The so-called thumbs are clearly visible, the primary feathers open, and the tail

## A note on Flying Technique in Nature, as Indicated by the Camera

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well spread and acting as a brake. Note how the undercarriage is automatically lowered as the bird loses flying speed. The wings are moving back, and the probability is that the bird is about to make a fresh flap. The point to notice is that the bird in this attitude is getting the maximum amount of drag, but with sufficient lift to keep control. It does not stall and go into a spin.

Fig. 2 is probably a stalled turn. The attitude of the bird's head suggests that it has spotted something and is turning in that direction. The ruffling of the feathers on the leading edge leads me to believe the seagull's wing is stalled,

in the centre section at any rate.

The gulls shown in Fig. 3 are excellent examples of gliding flight and are very reminiscent of the modern glider. Again, I would particularly like to draw attention to the excellent view of the pilot.

## Air-brakes

Fig. 4 is a picture of the bird which has stalled just as it seized its food. Note the ruffling of the leading-edge feathers at the centre section and the clear "thumbs." The tail and wings have been spread to their fullest extent to provide the maximum braking power at the instant of taking the food.

In Fig. 5 the gull is braking hard as it comes down to take its food. Note the spread of the feet. Web-footed birds often use their feet to help them on a turn, as well as twisting the tail, as can be seen fairly clearly in this photograph.

It is not easy to comment on bird photographs without knowing the conditions, and the general conclusions which have been given may not be correct; but whatever conclusions may be drawn, one thing is certain—that the flow of air over a bird's wing is one of those mysteries of aviation which require close scientific study.

The more I study the way of an eagle in the air the more I am puzzled by the way of the designers of modern aircraft.

## DEATH of W. E. ("BILL") DAVIS

BY the death of W. E. ("Bill") Davis the flying club movement in this country loses one of its most valuable and popular supporters.

The accident which robbed the Cinque Ports Flying Club of its managing director and three members occurred last Saturday evening. Mr. Davis had taken off in the Club's Monospar with three passengers, Miss Yvonne Hernu, Mr. R. A. J. Hernu and Miss Gertrude Mohr (Mrs. Cross). When a short distance from the aerodrome both engines stopped, one after the other, and the machine spun to the ground from a height of about 250ft. At the inquest, at which verdicts of "Death by misadventure" were returned, Capt. F. S. Wilkins, of the Air Ministry, showed that the machine had taken off with the petrol tap closed. In reply to the Coroner he said that the aeroplane was perfectly safe, but the design of the tap was "most unsatisfactory." [We understand that on later Monospars a warning device is incorporated.—ED.]

Mr. Davis, who is brother of Capt. Duncan Davis, of Brooklands, was born at Birkenhead in 1903, and educated at Dover College. Shortly after the war he went out to Java, in the cotton business, and returned to England in 1931. He learned to fly early in 1932. In that



A very characteristic portrait.

year Brooklands Aviation, Ltd., took over the Cinque Ports Club, and Mr. Davis went to Lympne as manager, the results of his terrific enthusiasm and hard work soon becoming apparent.

He married his equally popular wife, Ann, in 1932, and both of them carried on the good work. In 1935 they purchased the club from Brooklands, and the Cinque Ports Aviation Co., Ltd., was formed.

The thousands of flying people, British and foreign, who have met them at such famous Lympne affairs as the International Meetings will grieve to hear of the tragedy, and will feel the deepest sympathy for Mrs. Davis.

Mrs. Davis, says a friend, "has been marvellous." She called her staff together on Monday night and assured them that the club and company would continue. She herself will take her husband's place as managing director, with Mr. J. A. M. du Port and F/O. David Llewellyn as co-directors.

"Bill" had those rare qualities of kindness and sociability, so often lacking every visitor to Lympne, whether on business or pleasure, feel that he was being personally and warmly welcomed by the whole club. He will be sadly missed.